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USE AND MAINTENANCE MANUAL



**GUIDE TO THE
CORRECT COLD ROOMS
INSTALLATION AND USE**

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1. General information

1.1. Generality

This Use and Maintenance is an integral part of the cold room, realized from the company BOXCOLD S.R.L.; for this reason, it must be with the cold room in case of its transfer to a new user or owner.

This manual must be carefully preserved and protected from every dangerous agent during all the cold room life.

This manual is realized to give to the users and technicians all the necessary information and instructions in order to operate in the good way and in all security conditions.



ATTENTION: *since it must be easy and immediate to consult, this manual must be located in an accessible place.*

This manual contains all necessary data and information for the preliminary training of the staff responsible for the cold room use; for this reason it must be used.

Although all the users cautions for a correct cold room use or maintenance, this manual assumes that, in the place where the cold room is installed, the current rules are observed in terms of safety and work hygiene and that the staff in charge of maintenance has a training that help to correctly understand the reported information.



NOTE: *The user can ask a manual copy (in case of damages of the original one) to the Technical Dept. Of Boxcold Srl, through a request in writing.*

1.2. Information properties

This Use and Maintenance Manual contains reserved information. All rights are reserved.

This manual cannot be reproduced or copied, in whole or in part, without a Producer written consent. Only the customer that get the manual with the cold room can use it and only for the installation, use and maintenance of the product the manual refers to.

The Producer declares that the contained info of this manual are congruent with the cold room technical specifications this manual refers to. The drawings, the schemes and the technical data are updated to the manual publication date and they are exclusively valuable for the cold room they are related to.

The Producer reserves the right to change or improve this manual without a notice.

The Producer assumes no responsibility for direct or indirect damages to persons, things or pets resulting from the different use of this manual or of the cold room.

1.3. Use and maintenance manual content

This Use and Maintenance Manual is addressed to the operators and technicians so as to properly know and understand the cold room.

In fact, this manual internally shows a general description of the cold room and its main components, together with the instructions to:

- properly transport, depalletize and install the cold room;
- properly use the cold room;
- properly clean and do maintenance of the cold room;
- take attention to safety rules.

The staff shall know both the cold room potentiality and the problems related to its use.

It is necessary to read all the paragraphs in order to understand the indications provided in this manual and to use the cold room.

1.4 Conventions and definitions

1.4.1 Generality

This manual is a cold room integral part, so it is important to guarantee its integrity during its use life. All the instructions are necessary to the operator/technician in order to correctly perform in a safety way all the installation operations.

The company is not responsible for all damages caused by an improper use or a failure to comply with the instructions provided in this manual.

Therefore, it is necessary to completely read all the related material so as to get the best cold room performance and assure the maximum durability of all the components.

The technical drawings and the photographs are provided as examples for an easier understanding of the test. Moreover, to guarantee a better knowledge of the cold room and of the indications of its correct use, the test of this Manual contains complete indications, providing further news, necessary attention or particularly significant dangers to consider.

1.4.2 PERSONAL PROTECTIVE EQUIPMENT and conduct rules.

For all the described operations contained in this Manual, the user can find the protection equipment that the staff need (eventually in addition to those already indicated to be used in the cold room installation place) and the conduct rules that allow to safeguard the operators safety.

GRAPHIC SYMBOLS USED TO INDICATE THE NEED FOR PERSONAL PROTECTIVE EQUIPMENT

In this paragraph there are the graphic symbols used to indicate the need to wear specific PPE.



Need to use head protection.



Need to use protective gloves.



Need to use protection clothes.



Need to use the safety shoes.



Need to use protective glasses.

1.5 Warranty

1.5.1 General conditions

The producer, the company BOXCOLD S.R.L., warrants the cold room and the appliances produced from the same producer, free from defects in material and processing, according to the following points:

1) BOXCOLD warrants the supplied goods for one year from date of shipment under normal use conditions.

2) The guarantee does not include the electrical and electronic parts, glass and crystal, and any damage caused by manipulation of the goods after delivery to the carrier at BOXCOLD.

The guarantee does not operate in case of abnormal use or poor maintenance of the product by the Purchaser or by end user, or third parties, or for other reasons non chargeable to BOXCOLD..

The warranty does not cover and can not be extended under any circumstances to direct or indirect damage to persons or things, and it can't give the right to terminate the agreement.

3) The goods supplied under warranty is ex works from Veglie - Italy. The costs of travel and transfer of persons sent to comply with the warranty shall be chargeable to the Buyer.

4) Each adaptation of goods supplied with the local laws of the country where the goods will be installed, will take place through the Purchaser specific requests as BOXCOLD provides all the guarantees according to the Italian law.

5) In no case and for no reason, the Buyer may suspend or delay payments or other obligations to BOXCOLD.

6) BOXCOLD will have the right to request photographs, visits by technicians or trusted advisors, and to ask the defective part intact with shipping costs and transport in charge to the Buyer.

Operations that involve the Warranty cancellation.

Any attempt to disassemble or change some cold room components by the User or unauthorized personnel causes the warranty cancellation and relieves the Producer from any responsibility on any damage to both persons and things caused by these changes.

The producer is relieved from any responsibility and can cancel the cold room warranty in the following cases:

- unintended cold room use;
- use not compliant with the rules in force in the country of use;
- cold room installation in conditions not indicated in this manual;
- appliances uses not indicated in this manual;
- total or partial non compliance of the instructions contained in this manual; missing or incorrect maintenance;
- use of non original spare parts or parts not specified by the Producer.

Regarding the maximum exploitation of the cold room services and extraordinary maintenance operations, this manual does not replace the experience of trained and qualified installers, users and maintenance personnel.

In particular, the Technical Assistance Service of Boxcold Srl provides:

- telephone support regarding the simplest features and interventions that can be performed on the cold room;
- documentary material.

1.5.2 Request for Assistance Service

For tecnica Assistance Service, the operator can call:

TECHNICAL DEPT. OF BOXCOLD S.R.L.	
Via Prov.le Veglie-Leverano snc	
73010 Veglie - Le	
ITALIA	
Tel:	(+39) 0832 968423
Fax:	(+39) 0832 968423

During the requests for Assistance the user has to specify the NUMBER AND THE DATE OF THE ORDER CONFIRMATION TOGETHER WITH THE DELIVERY DATE.

2 Goods packaging



2.1 Horizontal pallet generality

The Boxcold cold room is transported and delivered to the custode in a disassembled way (it must be assembled on site) with a packaging realized in the following way:

- Standard AHT or ISPM pallet (according to customer request and country destination) ondo la richiesta del cliente e il paese di destinazione) movable from 4 sides;
- Foam protection system between pallet and the first panel on it;
- Foam protection system between the layers and between the components (panel – panel, panel – door, etc..) in order to avoid the panel rubbing;
- Last foam protection system + cardboard on the top of the pallet in order to avoid direct exposure to sunlight and weather;
- 4 cardboard corners as protection of the pallet corners;
- 4 horizontal and 2 vertical straps through an authomatic strapping system so as to better fix the pallet components and to avoid its components movement during transportation;
- 4 of 40cm wood pcs x the whole pallet perimeter, so as to avoid goods damage during its handling with the forklift's forks;
- 3 white stretch film layers wrapped around the pallet by an automatic packaging robot, with a fourth final layer avoiding the direct rainwater flow into the pallet, in case of outside storage.
- "Fragile" White ribbon that invites to caution during pallet movement;
- "Boxcold" advertising ribbon.

• Labeling

On all packagings there are some labels with the order number, customer ref., information related to the cold room details and sizes, goods recipient, and packing list.

2.2 Vertical pallet generality



Our vertical packaging has the following features:

- wooden cage forkliftable from each side
- height and width of the wooden cage available in several dimensions according to the panels to be packed inside. Actually, there are 18 different dimensions
 - 130 x 120 x 215
 - 130 x 120 x 235
 - 130 x 120 x 255
 - 110 x 120 x 215
 - 110 x 120 x 235
 - 110 x 120 x 255
 - 90 x 120 x 215
 - 90 x 120 x 235
 - 90 x 120 x 255
 - 130 x 80 x 215
 - 130 x 80 x 235
 - 130 x 80 x 255
 - 110 x 80 x 215
 - 110 x 80 x 235
 - 110 x 80 x 255
 - 90 x 80 x 215
 - 90 x 80 x 235
 - 90 x 80 x 255
- cut-to-size foam placed on the surface of the pallet used
- edges of the cold room placed on the back of the wooden cage and held together by an adhesive tape to avoid their fall during the opening of the pallet
- panels of the cold room placed vertically and strapped in groups of 3/4
- panels of the cold room packed all together with additional straps placed in the upper and lower part, and horizontally around the whole wooden cage
- foam corners placed on the top of the wooden cage to ensure tightness and to prevent tearing of the cover wrapping the whole pallet
- covering of the whole wooden cage with an opaque white protective shrink-wrapped cover of 200 my whose 12 months anti-UV additive ensures an excellent seal of the packaging
- fragile packing tape applied on the cover

• Labeling

On all packagings there are some labels with the order number, customer ref., information related to the cold room details and sizes, goods recipient, and packing list.

2.3 Transport and moving

During lifting and transport could occur some risks related to:

- operations on cold room done by unqualified, untrained and uninformed and improperly equipped personnel;
- incorrect choice and use of the cold room transport and movement means (for example, forklift, hoist, load lift);
- loss of load stability during the operations in question;
- cold room parts or components impacts with people or things due to unexpected movements or incorrect conducts by the operators;
- cold room components impact or fall, damaging the machine itself and the relative protections.

2.3.1.1 Necessary PERSONAL PROTECTIVE EQUIPMENT



• **Attentions to follow during lifting and transport phases**

During the lifting and transport phases it is necessary to follow some attentions as specified in the current paragraph.

- Designate for these operations only specialized and trained personnel with regards to machines handling procedures and able to choose and safely use the most suitable lifting and transport means for the circumstance (for example, forklift, hoist, load lift);
- Check and assure the correct fixing of all moving parts (or if provided remove and reassemble them at completed operation).
- Never lift the cold room components by catching them for non structural elements.
- Make sure that there are no people near the lifting, handling, unloading areas and always keep a safe distance.
- Always alert the operations start. Do not pass under suspended loads.
- Do not be transported together with the loads.

2.4 Delivery and cautions

At the goods delivery time, particular attention is required during handling process (as reported above), and to the control and verification of the packaging integrity.

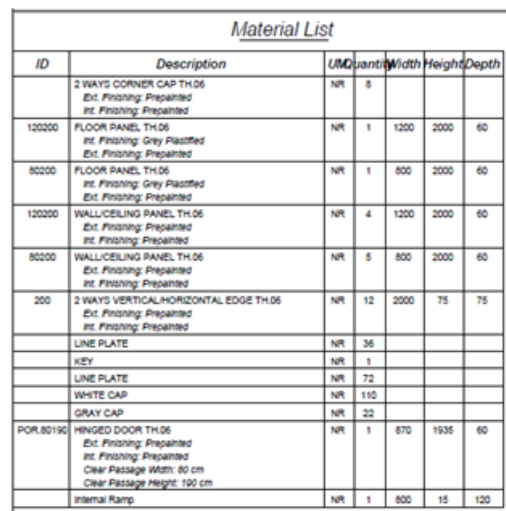
In case of non-compliant packaging (visible dents and damage), it is advisable to proceed as follows:

- **Declare any packaging on the bill, documenting with attached photos.**
- **send the documentation (photos and details of the damaged elements) to the Boxcold Technical Dept. (see the ref. to the 1.6.1. paragraph) and to Logistics Dept. to:**

BOXCOLD S.R.L. LOGISTICS DEPT.	
Via Prov.le Veglie-Leverano snc	
73010 Veglie - Le	
ITALIA	
Tel:	(+39) 0832 968423
Fax:	(+39) 0832 968423
Mail:	logistica@boxcold.it

In case of compliant packaging, proceed with depalletizing all components, carefully placing them vertically and horizontally on supporting walls, checking their relative conformity.

The control must be done with the material list and the mounting drawing that is always delivered together with the cold room.



2.5 Packaging materials disposal

- Separate the different parts that could cause pollution;
- Select material in order to facilitate their recycling, allocating them for selective disposal (above all, plastic and rubber elements);

- After removing and storing the polluting elements, rely on specialized structures for the carcasses disposal.

3. Standard cold room description

The Boxcold cold rooms are fully made of Made in Italy components, in order to guarantee a high quality level, according to all the health and hygiene standards.

They are made of suitable materials so as not to absorb the scents, not to create the nest of parasites and so as not to facilitate the development of mold and fungus. Their components (panels, edges doors, etc.) have all the necessary features that guarantee the food/not-food storage at controlled temperature.

The cold rooms are suitable to be placed inside technical rooms like warehouses, kitchens, hospitals, shops, etc.; they can be installed outside -once considered the right insulation thickness- but they must be placed under roofs that protect against the sunlights and weather conditions.

Their modularity can realise small and big projects, both for industrial and for not-standard structures.

Thanks to the 20cm-modularity, the not-standard dimension (on request) and the assembling of the vertical/horizontal foamed edges, Boxcold can realise special shapes cold rooms that fit perfectly into any room where they are placed.

The assembling system through male-female eccentric hooks and the use of joint line-up guarantee the easy installation and the perfect alignment between the elements of the cold room. At the end, the panels tightness is due to the special perimetric expanded polyethylene seal which is firstly inserted during the foaming step.



3.1 Panels

The supplied standards panels have internal and external white scratchproof galvanized prepainted steel sheet finish. The insulation comes from the polyurethane (PUR) foam density of 43Kg/ m³.

The minimum width of the panels is of 20cm until the width of 120cm, by considering the 20cm-modularity and they are 6cm, 8cm, 10cm, 12cm or 14 cm thick.

OPTIONAL:

Internal /external galvanized plastified sheet;

304 scotch brite stainless steel.

3.2 Floor

All our floors have internal finish with grey plastified non-slip steel sheet, with polyurethane (PUR) D=43Kg/m insulation and external finish with galvanized pre-painted steel sheet. On request, further finishes are available: the 304 tela di lino stainless steel, the stratified phenolic (HPL) or the phenolic plywood.

The standard cold rooms floor is vehicular with a 0,7mm thick steel sheet, glued on a 12mm thick reinforced marine plywood: static capacity 4000 Kg/m²; dynamic capacity 250 Kg; punctual capacity 140 Kg.

OPTIONAL:

- Reinforced floor made up of a 0,7 mm thick steel sheet, glued on a 20mm thick reinforced marine plywood with PVC honeycomb structure, foamed inside the floor: static capacity 6000 Kg/m²; dynamic capacity 1500 Kg; punctual capacity 300 Kg;

- Pedestrian floor made up of a 0,7mm thick steel sheet: static capacity 1500 Kg/m²; punctual capacity 100 Kg.

3.3 Vertical and horizontal foamed beams

Standard vertical and horizontal edges have the internal and external anti-scratch white galvanized prepainted steel sheet finish. On request, our edges are available with the following internal and external finish: white galvanized steel sheet, 304 scotch brite stainless steel. Insulation is guaranteed by the use of polyurethane foams (PUR) D=50 Kg/ m and they have an internal round corner of R15mm and an external round corner of R10mm.

3.4 Door

The standard door (included in the cold room price) has the same finish as the standard panels. It is characterised by:

- a 80*190H or 90*190H clear passage;

- a leaf with an aluminium perimeter profile;
- hinges in composite material with ramp and height adjustment;
- external lockable handle;
- internal handle with safety push opening;
- an aluminium internal ramp;
- a perimeter black door gasket.

The low temperature doors -thickness 10/12/14cm- are always equipped with the electric heater (220V). This solution guarantees a homogeneous heating along the perimeter of the frame and it allows its easy replacement.

3.5 Cold rooms without floor

When cold rooms have no floor, the ground attachment system is guaranteed by the use of a "C" sanitary PVC profile and four 90° rounded angles. This system guarantees the perfect adaptation of the cold room to the floor.

These accessories are standard equipment for all the cold rooms without floor.

4. Installation and warnings

4.1 General safety information

- Avoid the cold room direct exposure to the sunlight or any kind of radiation, i.e. high density incandescent light, ovens, heating radiators, etc.;
- Avoid the cold room direct exposure to the air flows from fans, air conditioners, etc.;
- In case of the outside cold room installation, make sure that there is a roof to protect it against the weather conditions (sun, rain, wind, snow, etc.);
- Do not install the cold room less than 10cm from the existing walls in order to avoid possible condensations; do not approach two cold rooms walls;
- make sure that the existing floor is perfectly flat. On the contrary, remove any kind of unevenness, by using a slab;
- It is recommended to use the aeration profile under the low temperature cold rooms so as to allow a good ventilation. Pay attention to the further modifications of the installation (decrease of more than the 30% of the floor capacity).

4.2 General cold room mounting instructions

The number of installators depends on the cold room dimensions (at least 2 people). The mounting does not need the use of specific tools, except for:

- tape-measure;
- level (for big cold rooms, use the water level);
- string to draw;
- 8mm hex wrench;
- wallboard saw or jigsaw;

- drill;
- riveting machine;
- screwdriver;
- silicone;
- scaffolds or manual/automatic lifts (depending on the cold room height for the ceiling panels and edges mounting).

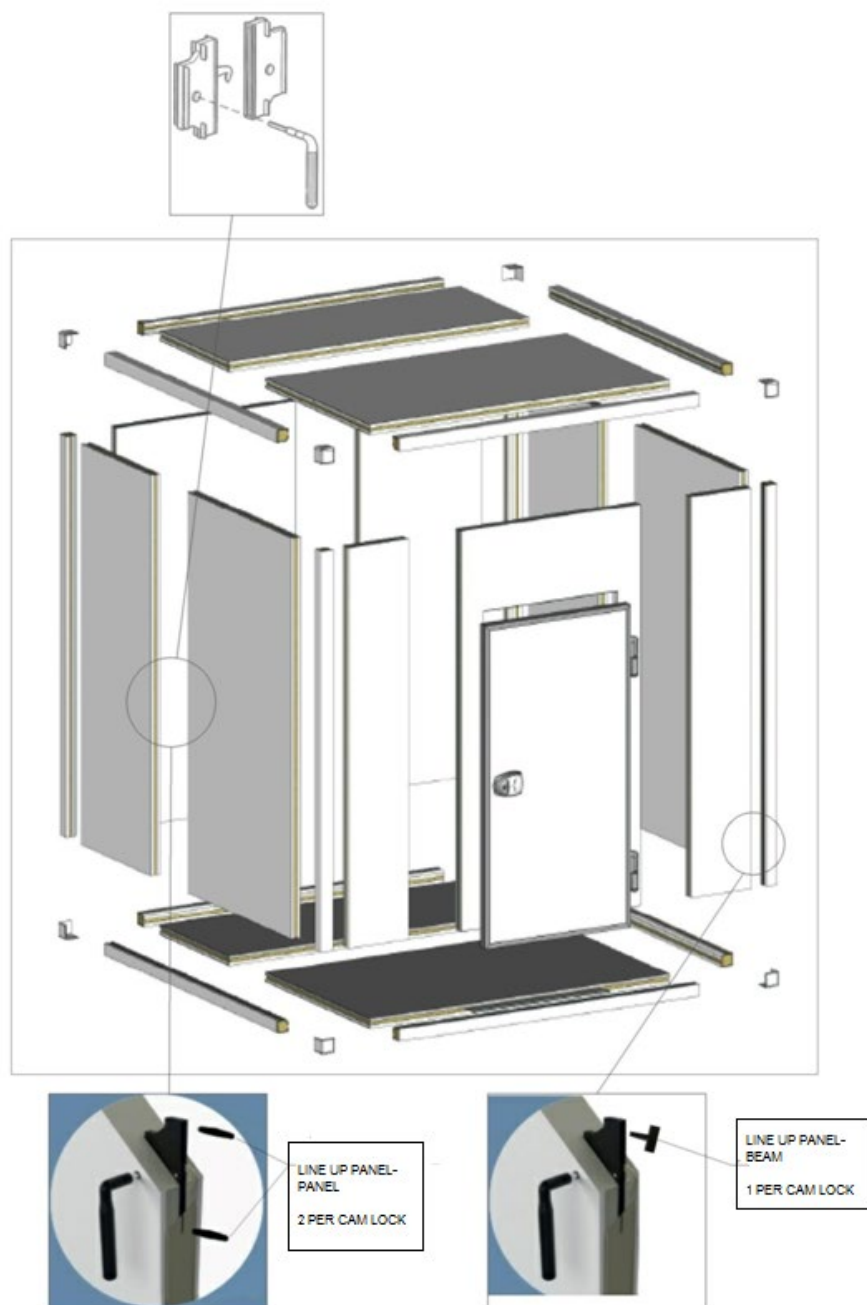
4.2.1 Joint system

It occurs thanks to the male-female cam lock that hooks and can be hooked. This mechanism is eccentric and it changes the circular movement of the key to machine movement of the cam lock, allowing the tightening between the two cam locks and the perfect link between the panels or other elements.

Operating Mode:

- Get close the two elements to tighten;
- Insert the right line up (if necessary);
- insert the 8mm hex wrench (in support);
- Put the hex wrench inside the cam lock and turn it in a circular movement to right or left (according to the verse);
- Once hooked, keep turning the cam lock until the limit;
- Verify the perfect tightening of the elements.

4.3 Cold room installation steps



For a good installation, it is recommended to use the attached technical drawing and to follow the steps as below:

1. Mark on the ground the external cold room perimeter that is aligned with its diagonal dimensions;
2. Lay and assemble the floor panels together with the horizontal edges with the help of the joint system (line-up) and joint caps according to the mounting plan. When the cold rooms are floorless, lay and fix the C-shape profile on the ground with silicone or fisher;
3. If necessary, put the joint line-up among the panels and panels/edges;
4. Once installed the floor together with its edges and corner caps, mount the vertical panels, ensuring that they are installed in the same verse with the second cam lock 1mt far from the ground , whereas the first cam lock 20cm far from the ground;
5. Place initially one edge and two vertical panels in the farthest corner from the enter of cold room.
6. Get on with the placement of the panels along the two sides with the horizontal edges and corner caps.
7. Install then the panels of three sides with the edges, by mounting the ceiling panels in the same time.

WARNING!



During the installation, take care of the good alignment among the panels by using the join line-up (if necessary).

8. Finish with the installation of panels on the three sides and on the ceiling too.
9. In case of divided ceiling panels, you will have a further kit for its linking to the existing room/existing beam, which includes the threaded rods with the PVC axle boxes.
10. The quantity of the threaded rods and the PVC axle boxes is the same as the quantity of the ceiling panels.



- **Leaned ceiling**



- In case of positive temperature cold rooms with ceiling panels that are longer than 400cm, the ceiling panels mounting system takes place by positioning them on the vertical panels (see picture above)
- After its installation, the ceiling panel is internally finished by the aluminium profile + white PVC sanitary profile and externally finished by the folded sheet that has the same colour as the cold room's finish.

- **Leaned ceiling with groove**



- In case of negative temperature cold rooms with ceiling panels that are longer than 400cm, the ceiling panels mounting system takes place by positioning them on the vertical panels (see picture above). They are made with L-shaped break-in to make the thermal cut at the joint point of the two panels (ceiling-wall).
- After its installation, the ceiling panel is internally finished by the aluminium profile + white PVC sanitary profile and externally finished by the folded sheet that has the same colour as the cold room's finish.

11. Install the door panel and attach its threshold on the bottom through the use of supplied rivets, when you have already installed all the ceiling/wall panels.
12. Verify the door closure from the inside and make sure that there are no gaps around its perimeter.

On the contrary, get on with two adjustments: an adjustment relating to the handle, if the door gasket does not hit the door frame.

- Take the green piece off the handle by a screwdriver
- Using a cross-head screwdriver, bring the locking nose forward and backward until an optimal closure is achieved.

Secondly, in order to align the lower part of the door gasket, adjust the door through the hinges:

- Take the lower grey caps off both the hinges
- Act on the pin by raising or lowering the door and laterally unscrewing the screws that fix the hinge to the aluminium corner.



13. In case of **sliding door on panel**, move it first with the utmost care as the door leaf has a gasket that can be damaged if it is crushed to the ground (some supports must be used to protect it).

Before starting with the installation of the door, follow the operations below:

- make the panels cutting (clear passage hole) for the application of the door frame
- preparation of the excavation for the threshold placement (only for low temperature doors and cold rooms without floor)
- Provision of suitable coverings in case of doors mounted outside so as to protect it against the bad weather.

The hole for the door must be done according to the following formula:

Hole width = door clear passage + 100mm

Hole height = door height + 50mm

Only for sliding doors on wall panel.

Hole width = door clear passage + 172mm

Hole height = door height + 86mm

Only for sliding doors on concrete walls and positive temperature cold rooms (door frame width= 140mm)

The pit, only for the positioning of the thresholds for cold rooms without floor and in low temperature, must be performed (near the edges of the opening made on the wall) with a minimum depth of 84mm (as much as the height of the threshold itself so that it is with the flush



threshold on the surface), the width must be 120mm, considering it a little wider than the sum of the threshold and the thickness of the door frame and long as expressed by the following formula: door clear passage + 300mm.

MOUNTING OF FRAME ON WALL MADE UP OF PANELS

- Place the door frame perfectly vertical, by using the bubble level with water and lead;
- Lock the frame, by fixing the screws which are in the side-frame, closing the holes on the side-frame with the suitable PVC caps and foaming the gap between the frame and the one-component polyurethane panel, without exaggerating.
- Mount the support of the rails on the frame and against the wall, so as to be perfectly horizontal. So fix it through the appropriate screws, washers and nylon nuts, after drilling the wall panel with a bit of 13mm.
- Place the lower guide in correspondence with the holes provided on the frame for fixing the bracket. Fix the bracket with the supplied screws and make the holes d. 13 for the nylon threaded rod through the panels at an equal distance from each other-the quantity of the screws is of 2 pieces for doors with a clear passage smaller than 1800mm, and 3 screws for clear passage equal or bigger than 1800mm, to put them equally spaced in length. The screws will be fixed after the placement of the door leaf.

Mount the door leaf, laying carefully the pulley wheels on the rails, insert the roller of the back register mounted on the leaf inside the lower guide, without taking off the screws that hold the guide, but eventually loosening them in order to have the movement; for a possible adjustment of the door gasket pressure of the leaf itself, adjust the position of the back register on its eyelet. Wherease, vertically, the door can be adjusted by acting on the screw above the pulley.

14. Finally, make sure to close all the holes on the vertical panels and floor with suitable hole-covering caps supplied with together with the accessories: white caps for vertical/ceiling panels , grey caps for floors or for stainless steel walls, brown caps for the stratified HPL floor.

4.3.1 Mounting steps of mobile dividing wall



If the cold room is equipped with mobile dividing wall inside, install it as described below:

- Place and fix the C-shape profiles, by using the fisher or silicone, for floor, ceiling and vertical panels. Insert the two dividing corners (one at the top, one at the bottom);
- Mount the panels of the dividing wall;
- Mount the last vertical C-shape profile;
- Mount the last two dividing corners;

- Mount the cold room's front wall and complete the assembly.



WARNING!

The dividing wall must be mounted before closing one external cold room side.

PLEASE NOTE: Once the assembly is complete, check that the whole installation is correct and proceed with cleaning the surfaces before loading the product.

4.3.2 Mounting steps for fixed dividing wall



If the cold room has the fixed dividing wall, proceed as described below:

- in the best position, mount the vertical and ceiling edges, by inserting the 3-ways corner caps in the corners;
- Mount the dividing panels;
- Fix the corner closures on both sides of the 3ways corner caps with the suitable Allen bolts M6.

4.1.1 Mounting steps for fixed dividing wall in florless cold rooms



- In the best position, mount the vertical and ceiling edges by inserting the 3-wayscorner caps in the corners;
- Place a horizontal C-shape profile on the ground and the 2 3-waysPVC base angles by fixing them with screws (for a better holding, before attaching the C-shape profile it is necessary to place a silicone rope under the rounded flap of the profile itself);
- Mount the dividing panels;
- Mount the 3-ways corner to the ceiling;
- Fix the corner closures on both sides of the 3ways corner caps with the suitable Allen bolts M6.

5. Cold room Use

Before setting up the cold room and introducing the products to be stored, it is recommended to wait 24 hours and to ventilate it properly.
For negative cold rooms it is mandatory to install the pressure relief valves both on vertical panels and on ceiling panels.



FREEZER PRESSURE RELIEF VALVE ONLY ON VERTICAL PANELS



FREEZER PRESSURE RELIEF VALVE ON VERTICAL AND CEILING PANELS

5.1. Product charge and preservation

Thanks to its features, the cold room guarantees the preservation of products exclusively for refrigerated food use.

At the products arrival, check that the cold chain has been respected in all its phases without causing any temperatures changes of the products themselves.

Suggestions for a good use of the cold room:

Reach an ideal internal before the products loading;

Avoid the hot products loading inside the cold room;

Avoid the chemical and /or flammable products loading;

Limit the doors opening so as to guarantee the cold preservation.

5.2 Cold room cleaning

During the cold room cleaning it is recommended to use the gloves.

All cleaning operations must be carried out with the unit turned off and by specialized and qualified personnel, disconnecting the refrigerating unit.

A daily cleaning is recommended (both internal and external) in order to prevent dirt and microorganisms formation.

Avoid the use of products such as: chlorine, caustic soda, abrasive detergents, muriatic acid, vinegar, varichina and other products harmful to the cold room surface.

Do not use hard metal tools to remove ice.

For freezer cold rooms, it is recommended to defrost and clean them at least once a month.

For the refrigerating unit cleaning please read the Producer Use Manual.

5.3 Electrical connection



The installation and the electrical connections must be carried out properly following the current electrical standard. These operations must be carried out by specialized and qualified personnel, in accordance with the rules in force.

The company is not responsible for any non-observance of the current electrical standard.

For the refrigerating unit electrical connection please read the Producer Use Manual.

6. Maintenance and dismantling

6.1. Maintenance generality

For safety reasons, all the maintenance operations indicated in this paragraph must be carried out only by qualified and trained technicians.

Moreover, the technicians must have all the tools and the necessary PPE in order to operate safely.

ATTENTION: In order to always guarantee to the operators the full cold room efficiency and to prevent problems related to the deterioration of safety measures or machines stoppings that can be onerous, it is necessary to implement effective preventive maintenance, with some interventions at scheduled intervals. The aim is to renew or replace normal wear parts and to check the cold room components general condition.

6.1.1.1. Possible risks during maintenance and dismantling phases

During maintenance and dismantling operations there are some risks related to:

- operations on the cold room by unqualified, untrained, uninformed and not properly equipped personnel.
- contact with live parts of the electrical system.

6.1.1.2. Necessary PERSONAL PROTECTIVE EQUIPMENT



6.1.1.3. Attentions to follow during Maintenance and Dismantling phases

During Maintenance and Dismantling phases it is necessary to follow the following attentions:

- Perform the required operations using standard working tools (ladders, various tools) and always wearing the necessary PPE.
- All the operations must be carried out by qualified and properly trained personnel;
- Check that the power supplies have been suitably sectioned and that no one can reactivate them before the required interventions are completed (use of padlocks, appropriate signs and consolidated work procedures); also check that any residual energy has been discharged before carrying out the interventions.
- Obtain the necessary work permits and check that all the cold room preparation procedures for maintenance operations have been correctly carried out.
- Do not use, for any reason, gasoline, solvents or other flammable fluids for the elements cleaning, on the contrary use commercial and approved non flammable and non-toxic detergents.
- Do not make changes, transformations or modifications that could affect its safety, without a written authorization from the Producer.
- Before setting again the cold room up, check if all the cold room safety devices have been restored.

At least **60 days** before the maintenance operations, it is recommended to make a detailed examination of the necessary material:

1. Check if this material is already in stock,
2. Ask to the Producer Technical Dept. for the missing material, at least **30 days** before.

6.2. Cold rooms out of service, disassembly and dismantling

For disassembly and dismantling operations it is necessary to wear the following PPE:



6.2.1 Cold room out of service

For a long period cold room out of service, follow these operations:

1. Disconnect the refrigerating unit.
2. Clean the cold room.
3. Perform the maintenance operations.

6.2.2 Disassembly

If it is necessary to disassemble the cold room, follow the above procedure:

1. Isolate the cold room from the power supply.
2. Proceed with the cold room removal; contact the Producer Technical Dept. in order to have the necessary assistance during this intervention.
3. To proceed with the cold room components handling, Per procedere alla movimentazione dei componenti della cella frigorifera, prepare them in an appropriate way according to the fact that they must be transported in a different place, and stored or demolished.



The Producer is not responsible for any damages to things and / or persons in case of improper interventions carried out by unqualified, untrained, not properly equipped and unauthorized personnel.

6.2.3 Dismantling and disposal

Once completed the cold room life cycle, before proceeding with its last dismantling, it is necessary to carry out some operations that must minimize the environmental impact linked to the components disposal, as required by the rules in force on the waste disposal.

These operations are:

1. Separate and store parts with environmental impact, i.e.:
 - Separate the parts could cause pollution;
 - Make a selection of materials in order to facilitate recycling, allocating them for differentiated disposal (in particular selecting the elements in plastic or rubber).
2. Dispose of the carcasses, i.e.:
 - Once completed the removal and the storage of the polluting elements, rely on specialized structures for the carcasses disposal.



Lamps, glass, plastic, gaskets, sheets, components in foamed polyurethane must be